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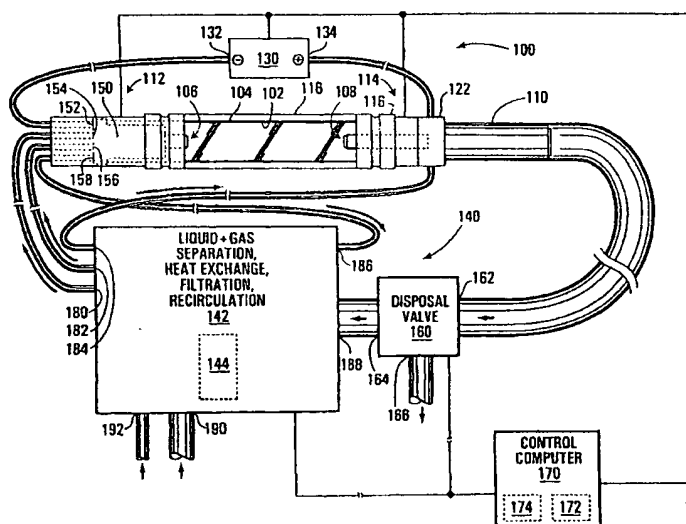
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[Continued on next page]

(54) Title: HIGH-INTENSITY ELECTROMAGNETIC RADIATION APPARATUS AND METHODS



(57) Abstract: An apparatus for producing electromagnetic radiation includes a flow generator configured to generate a flow of liquid along an inside surface of an envelope, first and second electrodes configured to generate an electrical arc within the envelope to produce the electromagnetic radiation, and an exhaust chamber extending outwardly beyond one of the electrodes, configured to accommodate a portion of the flow of liquid. In another aspect, the flow generator is electrically insulated. In another aspect, the electrodes are configured to generate an electrical discharge pulse to produce an irradiance flash, and the apparatus includes a removal device configured to remove particulate contamination from the liquid, the particulate contamination being released during the flash and being different than that released by the electrodes during continuous operation.



PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

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# INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER  
H01J61/52 H01J61/90

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## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
H01J

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 1 468 137 A (CANADIAN PATENTS DEV LTD) 23 March 1977 (1977-03-23) page 2, lines 44-96 page 3, line 32 - page 4, line 15 page 4, line 100 - page 5, line 15 figures 1,2,7	1-144
X	US 6 621 199 B1 (PARFENIUK DEAN ALLISTER ET AL) 16 September 2003 (2003-09-16) abstract column 1, lines 1-39 column 4, line 22 - column 5, line 58 column 17, lines 34-37 figure 1	1-144

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>US 2 877 341 A (EDGERTON HAROLD E) 10 March 1959 (1959-03-10)</p> <p>figure 1 column 1, lines 20-29 column 1, line 72 - column 2, line 9 column 2, lines 63-72</p>	<p>4,32,39, 43,51, 99,101, 110,116, 123,127, 132,138, 139</p>
A	<p>US 3 366 815 A (ANDERSON JOHN E) 30 January 1968 (1968-01-30) the whole document</p>	1-144
A	<p>US 3 983 436 A (SCHAFER ET AL) 28 September 1976 (1976-09-28) abstract; figure 1</p>	1-144
A	<p>US 2 906 858 A (JR. HAROLD S. MORTON,) 29 September 1959 (1959-09-29) the whole document</p>	1-144

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Information on patent family members

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